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EXAMINER	
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ART UNIT	PAPER NUMBER
2697	2

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/559,519	BAKSHI, YURY	
	Examiner	Art Unit	
	Michael E Robustelli	2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> > e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipate by Hosein (U.S. Patent No. 6,442,139).

-Regarding claim 1, Hosein discloses a method of controlling data transmission in a network (Col. 4, lines 1-4) between at least one terminal and at least on server (where "sources" and "messages processors" are interpreted at terminals and servers, respectively; Col. 4, lines 6-9). Hosein further teaches of determining a current status ("congestion," Col. 4, lines 35-43; Col. 4, lines 57-61) of the at least one server (where the message processor is a "database query engine," Col. 4, lines 10-12), determining a transmission rate of the at least one terminal based on the current status of the at least one server and adjusting the transmission from the at least one terminal to the at least one server (where determining and adjusting are performed by the "message processor" [20] and "source controller" [10] respectively; Col. 4, lines 61-67; Fig. 3).

-Regarding claim 9 Hosein discloses an apparatus for controlling data transmission in a network (Col. 4, lines 1-4) between at least one terminal (where "sources" are interpreted as

terminals) and at least on server (where the "messages processors" and "databases" combined are interpreted as servers; Col. 3, lines 16-18; Col. 4, lines 6-14; Fig. 3). Hosein further teaches of a memory (the "database" of the server; Fig. Col. 4, line 35) and a controller (the "message processor" of the server Col. 4, lines 10-12) for querying the database and transmitting control information to the source controller. Though Hosein does not explicitly show the controller being connected to the memory, it is inherent in the design (as can be seen in Fig. 2b and 3, where the "carried load," [13] of Fig. 3, is output to the "database," [6] shown in Fig. 2b, as database queries; Col. 4, lines 9-13). Hosein further teaches of the system comprising a network (Col. 3, lines 14-16 and Col. 4, lines 16-15; 1 of Fig. 1), though it is not explicitly shown, a network interface connected to the controller (the "message processor" [20] of the server) is inherent in the design so that it can transmit control information (Col. 4, lines 63-67) over the network (to the "source controller;" 10 of Fig. 3). Hosein further teaches of determining a current status ("congestion," Col. 4, lines 35-43; Col. 4, lines 57-61) of the at least one server (where the message processor is a "database query engine," Col. 4, lines 10-12), determining a transmission rate of the at least one terminal based on the current status of the at least one server and adjusting the transmission from the at least one terminal to the at least one server (where determining and adjusting are performed by the "message processor" [20] and "source controller" [10] respectively; Col. 4, lines 61-67; Fig. 3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosein (U.S. Patent No. 6,442,139) is view of Jordan et al. (U.S. Patent No. 6,438,652).

-Regarding claim 2, Hosein as discussed with the rejection of claim 1, further teaches of receiving control information from one of at least one server so that the load on the server can be regulated (Col. 4, lines 61-67). Hosein fails to explicitly teach of receiving an overload notification from one of at least one server and updating a local status indicator for the at least one server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a load monitor maintains a local status indicator ("local load condition") based on overload notification ("load condition information," Col. 4, lines 1-7), which is used to balance the load across a collection of servers (Col. 3, lines 19-24).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of transmitting overload notifications from the server to the controller in

the Hosein's system. One of ordinary skill in the art would have been motivated to do this in order to alleviate the processing demands on the overloaded server.

-Regarding claim 3, Hosein as discussed with the rejection of claim 1, further teaches of utilizing weighting techniques in a system with multiple clients and multiple servers ("sources" and "processors" respectively) that could adjust transmissions by coordinating the handling of messages to different message processors (Col. 8, lines 13-16). Hosein fails to explicitly teach of adjusting the transmission by modifying at least one local load weight to move a load from at least one overloaded server to at least one non-overloaded server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a load balancer adjusts the transmission by modifying at least one local load weight ("load condition," Col. 6, lines 11-15) to move a load from at least one overloaded server to at least one non-overloaded server (Col. 1, lines 51-53; Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of modifying a local load weight to move a load from an overloaded server to an non-overloaded server in the system of Hosein so that differential loading of each server can be performed (Col. 8, lines 8-16). One of ordinary skill in the art would have been motivated to do this requests for service which not simply be discarded during times of a server overload, while there are other servers available, thus improving system performance.

-Regarding claim 4, Hosein as discussed with the rejection of claim 1, further teaches of a source controller diverting requests for service ("messages") to another server ("message processor") when it receives a control indication that the intended server is overloaded (Col. 1,

lines 46-55). Hosein fails to explicitly teach of determining an overload status of each server based whether any server is overloaded.

Jordan teaches of a system system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a load balancer determines the overload status ("load condition," 1021 of Fig. 2a) or each server (1022 Fig. 2b) based on whether any server is overloaded (Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of determining the overload status of each server in the system of Hosein so that the requests for service are not diverted a server that is also overloaded. One of ordinary skill in the art would have been motivated to do this to efficiently and effectively avoid overloaded servers and maintain quality of service, thus improving system performance.

-Regarding claim 5, Hosein further teaches of adjusting a local load coefficient ("blocking probability," Col. 7, lines 44-55) based on the overload status ("control parameter feedback to source controller" Col. 4, lines 63-67; "source controller(s)" Col. 7, lines 45-48).

-Regarding claim 6, Hosein further teaches of a load controller ("source controller") for either diverting a load to another server ("message processor") or reducing an offered load, in the event of a first server overload (Col. 1, lines 46-55). Hosein further teaches of a method of reducing the offered load by implementing percent blocking in which a local load coefficient is decreased (increase in probability of blocking is equivalent to decrease in probability of accepting, Col. 7, lines 51-55; 160 of Fig. 4) to regulate the load (Col. 8, lines 44-51). Hosein fails to explicitly teach of decreasing the local load coefficient if the overload status indicates all of the servers are overloaded.

At the time of invention it would have been obvious to a person of ordinary skill in the art to choose to reduce an offered load in the event that all servers are overloaded, because diverting the load to another server fails to overcome the problem, therefore, the method disclosed by Hosein for reducing the load by decreasing the local load coefficient is the default means for avoiding continued server overloads. One of ordinary skill in the art would have been motivated to do this so that redundant overload avoidance mechanisms are provided, through first avoiding an overload and then second decreasing a load, which makes the system more efficient by avoiding the discarding or blocking of service requests.

-Regarding claim 7, Hosein further teaches of a load controller ("source controller") for either diverting a load to another server ("message processor") or regulating an offered load, in the event of a first server overload (Col. 1, lines 46-55). In the case where none of the servers are overloaded, it would be obvious to not divert service requests since it is unnecessary. Hosein further teaches of the method of regulating the offered load comprising increasing the offered load by implementing percent blocking in which a local load coefficient is increased (decrease in probability of blocking is equivalent to increase in probability of accepting, Col. 7, lines 51-55; 180 of Fig. 4) to regulate the load (Col. 8, lines 44-51) when the server ("message processor") is not in a situation of overloading ("A.Q.D. < Threshold;" 140, 170 and 180 of Fig. 4). This is done in order to achieve the optimal performance of the server ("message processor," Col. 2, lines 17-28). Hosein fails to explicitly teach of increasing the local load coefficient if the overload status indicates none of the servers are overloaded.

At the time of invention it would have been obvious to one of ordinary skill in the art to implement Hosein's method of load regulation to increase the local load coefficient (i.e. decrease

the percentage blocked) in the situation where none of the servers are overloaded, because diversion of the load is not necessary. One of ordinary skill in the art would have been motivated to do this so that optimal performance of the server may be maintained.

-Regarding claim 8, Hosein as discussed with the rejection of claim 1, further teaches of utilizing weighting techniques in a system with multiple clients and multiple servers ("sources" and "processors" respectively) that could adjust transmissions by coordinating the handling of messages to different message processors (Col. 8, lines 13-16). Hosein fails to explicitly teach of modifying at least one local load weight if a portion of the at least one server is overloaded server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a load balancer adjusts the transmission by modifying at least one local load weight ("load condition," Col. 6, lines 11-15) when a portion of the at least one server is overloaded in order to move a load from at least one overloaded server to at least one non-overloaded server (Col. 1, lines 51-53; Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of modifying a local load weight if a portion of the at least one server is overloaded so that the loads on the servers can be balanced in the system of Hosein. One of ordinary skill in the art would have been motivated to do this requests for service which not simply be discarded during times of a server overload, while there are other servers available, thus improving system performance.

-Regarding claim 10, Hosein as discussed with the rejection of claim 9, further teaches of receiving control information from one of at least one server so that the load on the server can be

regulated (Col. 4, lines 61-67). Hosein fails to explicitly teach of receiving an overload notification from one of at least one server and updating a local status indicator for the at least one server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a controller ("load monitor," Col. 6, lines 25-28) maintains a local status indicator ("local load condition") based on overload notification ("load condition information," Col. 4, lines 1-7), which is used to balance the load across a collection of servers (Col. 3, lines 19-24).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of transmitting overload notifications in the system of Hosein. One of ordinary skill in the art would have been motivated to do this in order to alleviate the processing demands on the overloaded server.

-Regarding claim 11, Hosein as discussed with the rejection of claim 9 further teaches of utilizing weighting techniques in a system with multiple clients and multiple servers ("sources" and "processors" respectively) that could adjust transmissions by coordinating the handling of messages to different message processors (Col. 8, lines 13-16). Hosein fails to explicitly teach of adjusting the transmission by modifying at least one local load weight to move a load from at least one overloaded server to at least one non-overloaded server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a controller ("load monitor," Col. 6, lines 25-28) adjusts the transmission by modifying at least one local load weight ("load

condition," Col. 6, lines 11-15) to move a load from at least one overloaded server to at least one non-overloaded server (Col. 1, lines 51-53; Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of modifying a local load weight to move a load from an overloaded server to an non-overloaded server in the system of Hosein so that differential loading of each server can be performed (Col. 8, lines 8-16). One of ordinary skill in the art would have been motivated to do this requests for service which not simply be discarded during times of a server overload, while there are other servers available, thus improving system performance.

-Regarding claim 12, Hosein as discussed with the rejection of claim 9, further teaches of a source controller diverting requests for service ("messages") to another server ("message processor") when it receives a control indication that the intended server is overloaded (Col. 1, lines 46-55). Hosein fails to explicitly teach of determining an overload status of each server based whether any server is overloaded.

Jordan teaches of a system system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a controller ("load monitor," Col. 6, lines 25-28) determines the overload status ("load condition," 1021 of Fig. 2a) or each server (1022 Fig. 2b) based on whether any server is overloaded (Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of determining the overload status of each server in the system of Hosein so that the requests for service are not diverted a server that is also overloaded. One of ordinary skill in the art would have been motivated to do this to efficiently and effectively avoid overloaded servers and maintain quality of service, thus improving system performance.

-Regarding claim 13, Hosein further teaches of adjusting a local load coefficient ("blocking probability," Col. 7, lines 44-55) based on the overload status ("control parameter feedback to source controller" Col. 4, lines 63-67; "source controller(s)" Col. 7, lines 45-48).

-Regarding claim 14, Hosein further teaches of a load controller ("source controller") for either diverting a load to another server ("message processor") or reducing an offered load, in the event of a first server overload (Col. 1, lines 46-55). Hosein further teaches of a method of reducing the offered load by implementing percent blocking in which a local load coefficient is decreased (increase in probability of blocking is equivalent to decrease in probability of accepting, Col. 7, lines 51-55; 160 of Fig. 4) to regulate the load (Col. 8, lines 44-51). Hosein fails to explicitly teach of decreasing the local load coefficient if the overload status indicates all of the servers are overloaded.

At the time of invention it would have been obvious to a person of ordinary skill in the art to apply Jordan's teaching of choosing to reduce an offered load in the event that all servers are overloaded in the system of Hosein. Diverting the load to another server fails to overcome the problem, therefore, the method disclosed by Hosein for reducing the load by decreasing the local load coefficient is the default means for avoiding continued server overloads. One of ordinary skill in the art would have been motivated to do this so that redundant overload avoidance mechanisms are provided, through first avoiding an overload and then second decreasing a load, which makes the system more efficient by avoiding the discarding or blocking of service requests.

-Regarding claim 15, Hosein further teaches of a load controller ("source controller") for either diverting a load to another server ("message processor") or regulating an offered load, in

the event of a first server overload (Col. 1, lines 46-55). In the case where none of the servers are overloaded, it would be obvious to not divert service requests since it is unnecessary. Hosein further teaches of the method of regulating the offered load comprising increasing the offered load by implementing percent blocking in which a local load coefficient is increased (decrease in probability of blocking is equivalent to increase in probability of accepting, Col. 7, lines 51-55; 180 of Fig. 4) to regulate the load (Col. 8, lines 44-51) when the server ("message processor") is not in a situation of overloading ("A.Q.D. < Threshold;" 140, 170 and 180 of Fig. 4). This is done in order to achieve the optimal performance of the server ("message processor," Col. 2, lines 17-28). Hosein fails to explicitly teach of increasing the local load coefficient if the overload status indicates none of the servers are overloaded.

At the time of invention it would have been obvious to one of ordinary skill in the art to implement Hosein's method of load regulation to increase the local load coefficient (i.e. decrease the percentage blocked) in the situation where none of the servers are overloaded, because diversion of the load is not necessary. One of ordinary skill in the art would have been motivated to do this so that optimal performance of the server may be maintained.

Regarding claim 16, Hosein as discussed with the rejection of claim 9, further teaches of utilizing weighting techniques in a system with multiple clients and multiple servers ("sources" and "processors" respectively) that could adjust transmissions by coordinating the handling of messages to different message processors (Col. 8, lines 13-16). Hosein fails to explicitly teach of modifying at least one local load weight if a portion of the at least one server is overloaded server.

Jordan teaches of a system for controlling data transmission in a network comprising at least one client and at least of server (see abstract), where a load balancer adjusts the transmission by modifying at least one local load weight ("load condition," Col. 6, lines 11-15) when a portion of the at least one server is overloaded in order to move a load from at least one overloaded server to at least one non-overloaded server (Col. 1, lines 51-53; Col. 6, lines 58-64).

At the time of invention it would have been obvious to one of ordinary skill in the art to apply Jordan's teaching of modifying a local load weight if a portion of the at least one server is overloaded so that the loads on the servers can be balanced in the system of Hosein. One of ordinary skill in the art would have been motivated to do this requests for service which not simply be discarded during times of a server overload, while there are other servers available, thus improving system performance.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Scott et al. (U.S. Patent No. 6,650,717) – Discloses a method of balancing a load over a plurality of servers.

b. Gigliotti et al. (U.S. Patent No. 6,393,458) – Discloses a load balancer for balancing the load of a plurality of clients on a plurality of servers.

c. Krishnan et al. (U.S. Patent No. 6,222,856) – Discloses a throttling mechanism to allocate bandwidth between a plurality of servers.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael E Robustelli whose telephone number is 703-305-8326. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Michael E. Robustelli
June 16, 2003

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